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EXAMINER

DUONG, THOMAS

ART UNIT PAPER NUMBER

2145

DATE MAILED: 03/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/767,442

Applicant(s)

SATO, EIICHI

Examiner

Thomas Duong

Art Unit

2145

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 1, 5-7, and 9-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 5-7, and 9-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Response to Amendment***

1. This office action is in response to the applicants Amendment filed on December 13, 2005. Applicant amended *claims 1, 5, 11, and 13* and added *claims 14-25*. *Claims 1, 5-7, and 9-25* are presented for further consideration and examination.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. *Claims 13, 18-19, and 23* are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contains subject matter, which is not described in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification does not show how the computer program stored in a computer readable medium can perform the modules claimed. Please clarify the language of the claim.
4. *Claims 13, 18-19, and 23* are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed,

had possession of the claimed invention. The specification does not disclose the computer readable medium as claimed. Please clarify the language of the claim.

***Claim Rejections - 35 USC § 101***

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 13, 18-19, and 23 are rejected under 35 U.S.C. 101 because the claims are not limited to tangible embodiments since they are stored on an unspecified computer readable medium as claimed. As such, the claim is not limited to statutory subject matter and is therefore non-statutory. To overcome this type of 101 rejection the claims need to be amended to include only the physical computer media and not a transmission media or other intangible or non-functional media. For the specification at the bottom, carrier medium and transmission media would be not statutory but storage media would be statutory.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. Claims 1, 5-7, 9-13, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenley et al. (US005276867A), in view of Webber et al. (US005367698A), and further in view of Ofek et al. (US006108748A).
9. With regard to claims 1, 11, 13, and 20, Ofek discloses,
- *means for relating a shared file system of the migration source file sharing device to the shared file system of the migration destination file sharing device, the migration source shared file system having a plurality of files;* (Kenley, col.2, lines 18-30; col.8, line 25 – col.9, line 59; col.14, lines 37-39)  
Kenley teaches “a preferred backup processor 12 [that] carries out the backup process with the storage server 18 on-line and available for access to its users” (Kenley, col.8, lines 29-31). According to Kenley, “the backup processor 12 scans the file system, e.g., the directories of system disks 18, for candidate files to copy to the baseline backup volume 20” (Kenley, col.8, lines 44-46) and then “the file is copied to the baseline backup volume 20” (Kenley, col.8, lines 58-59). Furthermore, Kenley clearly states that this migration process takes places “for each candidate file” (Kenley, col.8, line 49) and more specifically, on a “file-by-file basis” (Kenley, col.14, lines 37-39).
  - *means for migrating data from the migration source file sharing device to the migration destination file sharing device on a file by file basis;* (Kenley, col.2, lines 18-30; col.8, line 25 – col.9, line 59; col.14, lines 37-39)  
Kenley teaches “a preferred backup processor 12 [that] carries out the backup process with the storage server 18 on-line and available for access to its users” (Kenley, col.8, lines 29-31). According to Kenley, “the backup processor 12

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*scans the file system, e.g., the directories of system disks 18, for candidate files to copy to the baseline backup volume 20"* (Kenley, col.8, lines 44-46) and then *"the file is copied to the baseline backup volume 20"* (Kenley, col.8, lines 58-59). Furthermore, Kenley clearly states that this migration process takes places *"for each candidate file"* (Kenley, col.8, line 49) and more specifically, on a *"file-by-file basis"* (Kenley, col.14, lines 37-39).

However, Kenley does not explicitly disclose,

- *means for setting or changing a migration status of each file;*

Webber teaches,

- *means for setting or changing a migration status of each file;* (Webber, col.13, lines 22-62; col.7, line 37 – col.8, line 30)

Webber teaches of utilizing a status to keep track of whether files are migrated or not.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Webber with the teachings of Kenley to *"provide such systems that are transparent to users and applications programs, and which automatically operate with the characteristics of magnetic disks in conjunction with user's existing or native filesystems without necessitating changes"* (Webber, col.3, lines 7-12) and to *"provide such systems having automated and effective backup and file restore functions"* (Webber, col.3, lines 13-15).

However, Kenley and Webber do not explicitly disclose,

- *means for causing access from the host computer to be switched from the migration source file sharing device to the migration destination file sharing device;*

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- *means for detecting the migration status of data to which access has been requested by the host computer;*
- *means for providing the data from the file system of the migration destination file sharing device in a case where the detected migration status of the data is a status where the data can be used from the file system of the migration destination file sharing device; and*
- *means for providing the data from the file system of the migration source file sharing device in a case where the detected migration status of the data is a status where the data cannot be used from the file system of the migration destination file sharing device.*

Ofek teaches,

- *means for causing access from the host computer to be switched from the migration source file sharing device to the migration destination file sharing device; (Ofek, col.2, lines 49-52; col.7, lines 7-17)*

Ofek teaches “in the case of a read operation, [the] second data storage device examines the data map or table to determine whether or not the data has been migrated to and is stored on the second data storage device” (Ofek, col.2, lines 49-52). Hence, Ofek teaches of a decision step to determining the location of the requested data (e.g., migrated data located on the second or destination storage system or data not migrated located on the first or source storage system) in order to respond appropriately.

- *means for detecting the migration status of data to which access has been requested by the host computer; (Ofek, col.2, lines 49-52; col.7, lines 7-17)*

Ofek teaches *"in the case of a read operation, [the] second data storage device examines the data map or table to determine whether or not the data has been migrated to and is stored on the second data storage device"* (Ofek, col.2, lines 49-52). Hence, Ofek teaches of a decision step to determining the location of the requested data (e.g., migrated data located on the second or destination storage system or data not migrated located on the first or source storage system) in order to respond appropriately.

- *means for providing the data from the file system of the migration destination file sharing device in a case where the detected migration status of the data is a status where the data can be used from the file system of the migration destination file sharing device; and* (Ofek, col.2, lines 52-54; col.7, lines 22-26)

Ofek teaches *"if it is determined that the data is stored on the second data storage device, the data is made available to the requesting device"* (Ofek, col.2, lines 52-54). Hence, Ofek teaches of making the requested data available to the requesting device from the second or destination storage system if the data has been migrated to it.

- *means for providing the data from the file system of the migration source file sharing device in a case where the detected migration status of the data is a status where the data cannot be used from the file system of the migration destination file sharing device.* (Ofek, col.2, lines 55-61; col.7, lines 27-46)

Ofek teaches *"if the data is not stored on the second data storage device, the second data storage device issues a data request, in form of a read data command, to the first data storage device, obtains the data and makes the data available to the requesting device"* (Ofek, col.2, lines 55-59). Hence, Ofek



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teaches of making the requested data available to the requesting device from the first or source storage system if the data has not been migrated.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Ofek with the teachings of Kenley and Webber to *“provide digital data storage systems having the speed and convenience of online data storage, and the economy and large capacity of offline storage;... to provide digital data storage systems that incorporate improved data migration methods, ... [and] to provide a data migration system that reduces the time associated with conventional data migration schemes, to the point that data migration occurs in a manner that is ‘transparent’—i.e., not discernable to the user”* (Kenley, col.2, lines 18-30). According to Ofek, it is advantageous to *“[allow] data migration between a first data storage system and a second data storage system while the database is open and a real-time data migration that is completely transparent to the host or data processing unit”* (Ofek, col.2, lines 12-16).

10. With regard to claims 5-7, Kenley, Webber, and Ofek disclose,

- *further comprising means for updating the network environment information of the migration source file sharing device to other values after starting the migration destination file sharing device on the basis of temporary setting-use network environment information, and for causing causes the migration destination file sharing device to inherit the updated network environment information of the migration source file sharing device.* (Kenley, col.2, lines 18-30; col.8, line 25 – col.9, line 59; col.14, lines 37-39; Webber, col.13, lines 22-62;

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col.7, line 37 – col.8, line 30; Ofek, col.2, lines 49-52; col.7, lines 7-17; col.2, lines 55-61; col.7, lines 27-46)

- *further comprising monitoring means for monitoring whether or not the network environment information of the migration source file sharing device has been updated to the other values.* (Kenley, col.2, lines 18-30; col.8, line 25 – col.9, line 59; col.14, lines 37-39; Webber, col.13, lines 22-62; col.7, line 37 – col.8, line 30; Ofek, col.2, lines 49-52; col.7, lines 7-17; col.2, lines 55-61; col.7, lines 27-46)
- *wherein the inheriting of the network environment information from the migration source file sharing device and the updating of the network environment information of the migration source file sharing device are respectively conducted by remote control.* (Kenley, col.2, lines 18-30; col.8, line 25 – col.9, line 59; col.14, lines 37-39; Webber, col.13, lines 22-62; col.7, line 37 – col.8, line 30; Ofek, col.2, lines 49-52; col.7, lines 7-17; col.2, lines 55-61; col.7, lines 27-46)

11. With regard to claim 9, Kenley, Webber, and Ofek disclose,

- *further including use frequency detecting means that detects the use frequency of data that cannot be used from the file system of the migration destination file sharing device, wherein data migrating priority is given to data whose use frequency detected by the use frequency detecting means is equal to or greater than a predetermined value.* (Ofek, col.3, line 55 – col.4, line 4)

12. With regard to claim 10, Kenley, Webber, and Ofek disclose,

- *wherein data migration statuses include*

- *a first migration status representing a status where migration of data from the file system of the migration source file sharing device to the file system of the migration destination file sharing device has not been conducted, (Ofek, col.2, lines 55-61; col.7, lines 27-46, col.8, line 25 – col.9, line 27, col.9, lines 45-67, col.10, lines 14-58)*
- *a second migration status representing a status where data is migrating from the file system of the migration source file sharing device to the file system of the migration destination file sharing device, (Ofek, col.2, lines 55-61; col.7, lines 27-46, col.8, line 25 – col.9, line 27, col.9, lines 45-67, col.10, lines 14-58)*
- *a third migration status representing a status where migration of data from the file system of the migration source file sharing device to the file system of the migration destination file sharing device has been completed, and (Ofek, col.2, lines 55-61; col.7, lines 27-46, col.8, line 25 – col.9, line 27, col.9, lines 45-67, col.10, lines 14-58)a fourth migration status representing a status where data is being provided from the file system of the migration source file sharing device; and*
- *in the case of the first migration status, a migration status of data to which access has been requested is changed to the fourth migration status, provides the data from the file system of the migration source file sharing device, and thereafter returns the migration status of the data to the first migration status, (Ofek, col.2, lines 55-61; col.7, lines 27-46, col.8, line 25 – col.9, line 27, col.9, lines 45-67, col.10, lines 14-58)*

- *in the case of the second migration status, the data from the file system of the migration source file sharing device is provided in a read-only mode, (Ofek, col.2, lines 55-61; col.7, lines 27-46, col.8, line 25 – col.9, line 27, col.9, lines 45-67, col.10, lines 14-58)*
- *in the case of the third migration status, the data from the file system of the migration destination file sharing device is provided, and (Ofek, col.2, lines 55-61; col.7, lines 27-46, col.8, line 25 – col.9, line 27, col.9, lines 45-67, col.10, lines 14-58)*
- *in the case of the fourth migration status, the data from the file system of the migration source file sharing system is provided in the read-only mode and thereafter the migration status of the data is changed to the first migration status. (Ofek, col.2, lines 55-61; col.7, lines 27-46, col.8, line 25 – col.9, line 27, col.9, lines 45-67, col.10, lines 14-58)*

13. With regard to claim 12, Kenley, Webber, and Ofek disclose,

- *wherein the step of causing access from the host computer to be switched to the migration destination file sharing device is one that causes access from the host computer to be switched from the migration source file sharing device to the migration destination file sharing device without changing network connection information that is set in the host computer. (Kenley, col.2, lines 18-30; col.8, line 25 – col.9, line 59; col.14, lines 37-39; Webber, col.13, lines 22-62; col.7, line 37 – col.8, line 30; Ofek, col.2, lines 49-52; col.7, lines 7-17; col.2, lines 55-61; col.7, lines 27-46)*

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14. Claims 14-19 and 21-25, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenley et al. (US005276867A), in view of Webber et al. (US005367698A), in view of Ofek et al. (US006108748A), and further in view of Iwamura et al. (US 20040049553A1).
15. With regard to claims 14-19 and 21-25, Kenley, Webber, and Ofek disclose,
- However, Kenley, Webber, and Ofek do not explicitly disclose,
- *further comprising:*
    - *means for causing the migration destination file sharing device to inherit, prior to data migration, network environment information for identifying the migration source file sharing device on the communications network.*
  - *wherein the means for relating the shared file system of the migration destination file sharing device with the shared file system of the migration source file sharing device copies a name of the shared file system of the migration source file sharing device so as to be a name of the shared file system of the migration destination file sharing device.*
  - *wherein the means for causing the migration destination file sharing device to inherit, prior to data migration, network environment information for identifying the migration source file sharing device on the communications network further includes:*
    - *means for acquiring the network environment information from the migration source file sharing device,*

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- *means for changing the network environment information into change-use network environment information and for restarting the migration source file sharing device,*
- *means for confirming whether the migration source file sharing device restarts with the change-use network environment information, and*
- *means for changing network environment information of the migration destination file sharing device into the original network environment information of the migration source file sharing device.*

Iwamura teaches,

- *further comprising:*
  - *means for causing the migration destination file sharing device to inherit, prior to data migration, network environment information for identifying the migration source file sharing device on the communications network.*

(Iwamura, pg.4, para.56-61; fig.3)

Iwamura teaches “before the data migration, the migration source storage system 100 is assigned Address A as the IP address” (Iwamura, pg.4, para.56), “next, the IP address which has been assigned to the migration source storage subsystem 100 will be changed from such Address A ... to such a different Address B” (Iwamura, pg.4, para.59), “next, the IP address of the migration target storage subsystem 110 will be assigned to Address A” (Iwamura, pg.4, para.60), making it “possible to obtain access to the migration target storage subsystem 110 through the use of the Address A” (Iwamura, pg.4, para.56). In addition, Iwamura teaches “in the migration target storage subsystem 110, there will be provided the same storage area ... as the

*storage area ... which the migration source storage subsystem 100 has (copy of configuration 321)" (Iwamura, pg.4, para.57). Hence, Iwamura teaches of the migration destination inheriting the configuration and network identification information of the migration source before the migration.*

- *wherein the means for relating the shared file system of the migration destination file sharing device with the shared file system of the migration source file sharing device copies a name of the shared file system of the migration source file sharing device so as to be a name of the shared file system of the migration destination file sharing device. (Iwamura, pg.4, para.56-61; fig.3; Iwamura, col.2, lines 59-61, col.7, lines 48-55, col.7, line 59 – col.8, line 7)*
- *wherein the means for causing the migration destination file sharing device to inherit, prior to data migration, network environment information for identifying the migration source file sharing device on the communications network further includes:*
  - *means for acquiring the network environment information from the migration source file sharing device, (Iwamura, pg.4, para.56-61; fig.3; Iwamura, col.2, lines 59-61, col.7, lines 48-55, col.7, line 59 – col.8, line 7)*
  - *means for changing the network environment information into change-use network environment information and for restarting the migration source file sharing device, (Iwamura, pg.4, para.56-61; fig.3; Iwamura, col.2, lines 59-61, col.7, lines 48-55, col.7, line 59 – col.8, line 7)*
  - *means for confirming whether the migration source file sharing device restarts with the change-use network environment information, and (Iwamura,*

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pg.4, para.56-61; fig.3; lwamura, col.2, lines 59-61, col.7, lines 48-55, col.7, line 59 – col.8, line 7)

- *means for changing network environment information of the migration destination file sharing device into the original network environment information of the migration source file sharing device.* (lwamura, pg.4, para.56-61; fig.3; lwamura, col.2, lines 59-61, col.7, lines 48-55, col.7, line 59 – col.8, line 7)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of lwamura with the teachings of Kenley, Ofek, and Webber to “[allow for] data migration between a first data storage system and a second data storage system while the database is open and a real-time data migration that is completely transparent to the host or data requesting device” (Ofek, col.12, lines 12-16). Furthermore, lwamura states “data management for, for example, an I/O request from the host during data migration may be performed as described in, for example, the U.S. Pat. No. 6,108,748... [By] referring to a bit flag of this bit map, it is determined whether or not the data block has been transferred. If the data block requested from the host is not transferred to the migration transfer target storage subsystem, the I/O request may be transferred to the original storage subsystem to read the data block from there for transmitting to the host” (lwamura, pg.3, para.50).

### **Response to Arguments**

16. Applicant's arguments with respect to *claims 1, 5-7, and 9-13* have been considered but are moot in view of the new ground(s) of rejection.



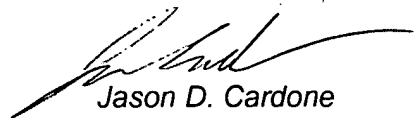
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**Conclusion**

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.
18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas Duong whose telephone number is 571/272-3911. The examiner can normally be reached on M-F 7:30AM - 4:00PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason D. Cardone can be reached on 571/272-3933. The fax phone numbers for the organization where this application or proceeding is assigned are 571/273-8300 for regular communications and 571/273-8300 for After Final communications.

Thomas Duong (AU2145)

March 8, 2006



Jason D. Cardone

Supervisory PE (AU2145)